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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,590	12/05/2003	Tsang-Gang Lin	3313-1072P	7328

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EXAMINER	
DATSKOVSKIY, SERGEY	

ART UNIT	PAPER NUMBER
2121	

DATE MAILED: 07/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/727,590	LIN ET AL.	
	Examiner	Art Unit	
	Sergey Datskovskiy	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☒ Claim(s) *10 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-11 have been submitted for examination.

2. Claims 1-9 have been rejected.

3. Claims 10-11 have been objected.

Claim Objections

4. Claims 1, 2 and 10 are objected to because of the following informalities:

a. Claim 1 contains a grammatically incorrect phrase "...to obtained the motion clips..." on line 5.

b. The word "determining" is misspelled in line 3 of claim 2.

c. Claim 10 contains misspelled words "starting" and "respectively" in line 3.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 contains a phrase "*retrieving the coordinate of each frame*". The meaning of this limitation is not clear, since it implies that each frame has one specific coordinate. For the purpose of this examination this limitation will be interpreted as "retrieving the coordinates of each frame".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al. ("Interpreting Movement Manner") in view of Benitez et al. ("Object-based multimedia content description schemes and applications for MPEG-7").

Claim 1

Zhao teaches a 3D animation conversion method using scripts (page 98, Abstract), comprising:

receiving a natural language script (page 100, chapter 5, Natural Language Interpreter; "*parser takes a natural language instruction…*");

formalizing the script (page 100, chapter 5, converting natural language to a tree);

comparing the script with a motion database comprising multiple motion clips (page 100, chapter 6, Database); and

retrieving the corresponding motion clips (page 100, chapter 6, Database; having motion templates keyed in the database implies retrieving them from said database); and

synthesizing a 3D animation according to the retrieved motion clips (page 100, chapter 4, "*The modifiers are then combined...*").

Zhao does not expressly teach a motion index table which is used to obtained the motion clips corresponding to the script.

Benitez teaches a motion index table which is used to obtained the motion clips corresponding to the script (page 5, disclosed as object hierarchies; objects are disclosed as motion objects on page 18, paragraph 1).

Zhao and Benitez are analogous art since they are both directed to processing motion data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include index table from Benitez and combine it with the database from Zhao. The reason for doing so would be to provide an efficient, compact, flexible, and interoperable representation of the multimedia content by storing video information in the standard MPEG-7 format (Benitez, page 2, paragraph 1). Therefore, it would have been obvious to modify Zhao in view of Benitez by storing motion data in MPEG-7 format and using object hierarchies as index table.

Claim 5

Zhao teaches the method of claim 1.

Zhao does not expressly teach the step to construct the motion database comprising: receiving motion data; retrieving the coordinate of each frame; extracting the features of coordinates in each frame; and constructing the index table of the motion data and the corresponding motion clips and motion annotations.

Benitez teaches the step to construct the motion database comprising:

receiving motion data (disclosed as video on page 15, chapter 4);

retrieving the coordinate of each frame (page 17, last paragraph; disclosed as retrieving spatial and temporal positions and boundaries for each visual object);

extracting the features of coordinates in each frame (page 17, last paragraph); and

constructing the index table of the motion data and the corresponding motion clips and motion annotations (pages 4-5, chapter 3; disclosed as object hierarchy; see page 7, lines 4-5 for an annotation feature).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include MPEG-7 format from Benitez and use it to store motion image data from Zhao using the same motivation as in claim 1 above.

Claim 6

Zhao teaches the method of claim 1.

Zhao does not expressly teach the method of claim 5, wherein the motion clip comprises multiple frames.

Benitez teaches that the motion clip comprises multiple frames (page 15, chapter 4.1).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include MPEG-7 format from Benitez and use it to store motion image data from Zhao using the same motivation as in claim 1 above.

Claim 7

Zhao teaches the method of claim 1.

Zhao does not expressly teach the method of claim 6, wherein the motion annotation is in the MPEG-7 DDL format.

Benitez teaches the motion annotation is in the MPEG-7 DDL format (page 2, paragraph 2).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include MPEG-7 format from Benitez and use it to store motion image data from Zhao and store the motion annotation in the MPEG-7 DDL format, using the same motivation as in claim 1 above.

Claim 8

Zhao teaches the method of claim 1.

Zhao does not expressly teach the method of claim 6, wherein the motion clip is obtained by partitioning the motion data according to semantics.

Benitez teaches that the motion clip is obtained by partitioning the motion data according to semantics (page 7, paragraphs 1-2).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include MPEG-7 format from Benitez and use it to store motion image data from Zhao using the same motivation as in claim 1 above.

Claim 9

Zhao in view of Benitez teaches the method of claim 1.

Zhao and Benitez do not expressly teach the method of claim 5, wherein the features of a frame are the coordinates of the frame projected to a polar coordinate system.

Examiner takes an Official Notice that use of polar coordinate system was well known in the art of animation at the time the invention was made.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to project coordinates of a frame into a polar coordinate system since Examiner takes Official Notice that using polar coordinates is well known in the art and could be used to represent the spatial relations of objects (Benitez, page 17, visual features) by using relative coordinates.

6. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao in view of Benitez as applied to claim 1 above, and further in view of Bhandari et al. (US Patent No. 5,895,464).

Claim 2

Zhao in view of Benitez teaches the method of claim 1, wherein the step of formalization comprising:

tagging the script into multiple words (Zhao, page 100, chapter 5, first paragraph; parsing tree for identifying different components implies tagging into multiple words);

determining the part of speech of each tag (Zhao, page 100, chapter 5, first paragraph);

transforming the idiom into a formal language (Zhao, page 100, right column, first paragraph).

Zhao and Benitez do not expressly teach that the step of formalization comprising:

determining the idiom of each tag according to the thesaurus.

Bhandari teaches:

tagging the script into multiple words (col. 4, lines 58-67);

determining the part of speech of each tag (col. 5, lines 1-10);

determining the idiom of each tag according to the thesaurus (col. 7, lines 16-20, disclosed as looking for synonyms in WordNet dictionary).

Zhao, Benitez and Bhandari are analogous art since they are all directed to processing visual data using natural language. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include entering a natural language script and formalizing it from Zhao and combine it with the thesaurus from Bhandari. The reason for doing so would be to expand the semantic knowledge by

using appropriate synonyms (as suggested by Bhandari for expanding the query words, col. 7, lines 12-16). Therefore, it would have been obvious to modify Zhao in view of Benitez and farther in view of Bhandari by looking up synonyms in the thesaurus while doing natural language processing.

Claim 3

Zhao in view of Benitez teaches the method of claim 1.

Zhao and Benitez do not expressly teach the method of claim 2, wherein the idiom is the most popular one among all synonyms of the tag.

Bhandari teaches that the idiom is the most popular one among all synonyms of the tag (col. 7, lines 20-23).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include natural language processing from Zhao and combine it with looking for the most popular synonyms from Bhandari using the same motivation as in claim 2 above.

Claim 4

Zhao teaches the method of claim 1.

Zhao does not expressly teach the method of claim 2, wherein the formal language is in the XML format.

Benitez teaches that the formal language is in the XML format (page 4, chapter 2.2).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include natural language processing from Zhao and combine it with the formal language format from Benitez, further combining it with using thesaurus from Bhandari, using the same motivation as in claims 1 and 2 above.

Allowable Subject Matter

Claims 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: as per claim 10, the prior art of record taken alone or in combination fails to teach synthesizing a 3D animation by indexing the cells containing the starting and ending clips and searching the possible paths from starting and ending cells. Instead of this, prior art of record teaches synthesizing a 3D animation by controlling effort and shape elements (Zhao, page 99, right column). Claim 11 is indicated allowable due to its dependence on the allowable claim 10.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Stern (US Patent No. 4,600,919) teaches generating a three dimensional animation. Gasper (US Patent No. 4,884,972) teaches speech synchronized animation. Susman (US Patent No. 5,261,041) teaches computer

controlled animation system based on definitional animated objects. Balogh et al. (US Patent No. 5,493,677) teaches generation, archiving, and retrieval of digital images with evoked suggestion-set captions and natural language interface. Katzenberger et al. (US Patent No. 5,867,175) teaches method and apparatus for scripting animation. Gever et al. (US Patent No. 6,329,994) teaches programmable computer graphic objects. DeWitt et al. (US Patent No. 6,535,215) teaches method for animating 3-D computer generated characters. Ando et al. (US Patent No. 6,549,887) teaches apparatus capable of processing sign language information. Mory (US App. No. 2003/0170002) teaches video composition and editing method. Badler teaches "Artificial Intelligence, Natural Language, and Simulation for Human Animation". Elliott et al. ("The Development of Language Processing Support for the ViSiCAST Project") teaches translation of natural language into gesture-oriented notation. Bindiganavale et al. teaches "Dynamically altering agent behaviors using natural language instructions".

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sergey Datskovskiy whose telephone number is (571) 272-8188. The examiner can normally be reached on Monday-Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight, can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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